

Work Order ID 137285

Thursday, September 24, 2015 1:29:35 PM

137285

Page 1

Item ID: D3319-1 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Forward Wearplate
Start Date: 9/23/15 Start Qty: 6.00 ***6*** Cust Item ID:
Required Date: 9/23/15 Req'd Qty: 6.00 ***6*** Customer:
Reference:

Approvals: Process Plan: SW Date: 20150925 Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3319	C								
100	FLOW WATER JET	0.00							
100									
Waterjet	Memo	0.01							
FLOW CNC Waterjet	1-Cut as per Dwg D3319								
	Dwg Rev: <u>C</u>								
	Prog Rev: <u>C</u>								
	2-Deburr if necessary								
110	QC2- Inspect parts off machine FAI/FAIB	0.00							
110									
QC	Memo	0.00							
Quality Control									
120	QC8- Inspect parts - second check	0.00							
120									
QC	Memo	0.00							
Quality Control									

DAS
38
3-89
OCT 08 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140 *140* Brake NC Brake NC	NC BRAKE Memo 1- Form using DT8326 & DT8261 as per Dwg D3319 Rev: <u>C</u> 2- Form flat on press using DT8776 block	0.00 0.00			DAS 30 9-89	<u>6</u>			OCT 08 2015
150 *150* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00				<u>(6)</u>			DAS 38 9-89 OCT 08 2015
160 *160* Large Fab Large Fab	Weld per dwg A/R Hardcoat steel Batch: <u>131416</u> Large Fab Memo 1- Layout weld location as per Dwg D3319 using jig D3319-1T3 2- Weld hard surface using DT8755 per QSI 004 and Dwg D3319 Rev: _____ Qty Part Number Description Batch A/R N/A 228/7560 Hardcoat Rod _____	0.00 0.02				<u>6</u>			15-11-05 MSL

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Description Work Order Deviation				Disposition							
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐		No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐		Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐		Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐		Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	
				OTHER : ☐							

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170	QC10- Inspect visual per QSI004- ground welds	0.00							
170									
QC	Memo	0.00				6			DAS 38 9-89 NOV 06 2015
Quality Control									
180	QC5- Inspect part completeness to step on W/O	0.00							
180									
QC	Memo	0.00				6			DAS 38 9-89 NOV 06 2015
Quality Control									
190	Grey Sandtex(Ref:4.3.5.6) per QSI005 4.3	0.00							
190									
Powdercoat	Memo	0.00				6			
Powder Coating	START TIME: 8.45 OVEN TEMPERATURE: 300 FINISH TIME: 9.15								6 15-11-9 DAS 34 9-89

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Root Cause				FAULT CATEGORY			
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐
Design	☐	Operator	☐	Bending	☐	Set-up	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐
Past Expiry Date	☐	Manufacturing Process	☐	OTHER : _____			
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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200	QC3- Inspect Part Finish	0.00							
200									
QC	Memo	0.00				6			DAS 38 NOV 10 2015
Quality Control									
210	Identify as per dwg & Stock Location: _____	0.00							
210	Packaging								
Packaging	Memo	0.00							
Packaging	Identify on inside surface using a permanent fine point marker with the following: TCCA-PDA, Dart Aerospace Ltd. P/N: D3319-1, B/N: BXXXXXX For Product Eligibility see PDA05-18 and Stock Location: <u>St 603</u>								NOV 10 2015
220	QC21- Final Inspection - Work Order Release	0.00							
220									
QC	Memo	0.01							
Quality Control									

NOV 10 2015

DQA: _____ Date: _____



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Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="width:15%;">Skid-tube ☐</td> <td style="width:15%;">Cross tube ☐</td> <td style="width:15%;">Water Jet ☐</td> <td style="width:15%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																															
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Picklist Print

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Work Order ID: 137285

137285

Parent Item: D3319-1

D3319-1

Parent Item Name: Forward Wearplate

Start Date: 9/23/15

Required Date: 9/23/15

Start Qty: 6.00

Required Qty: 6.00

Comments: IPP: B05.10.14Added step 9, dwg rev B KJ/EC
IPP Rev:C Now on Waterjet 06-10-26 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M1010S18GA		Purchased	No			100	sf	67.3542	0.628	3.966316			
M1010S18GA									**			<i>09/15/10/08</i>	
1010/1025 SHEET .048													

Location

Loc Qty

Loc Code

MAT019

67.354152

124428

3

m130454

0.3542

m132886

64

131353

4.5

DQA: _____ Date: _____

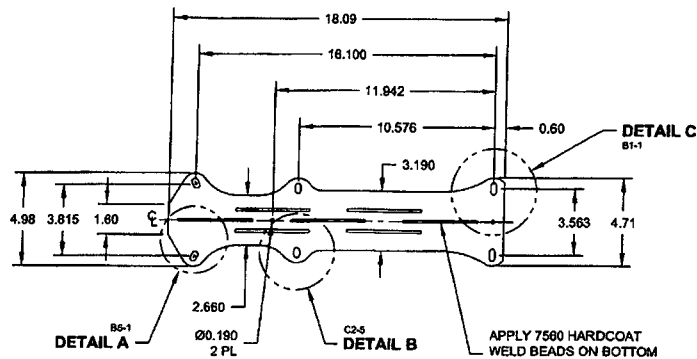


WORK ORDER NON-CONFORMANCE / UPDATE

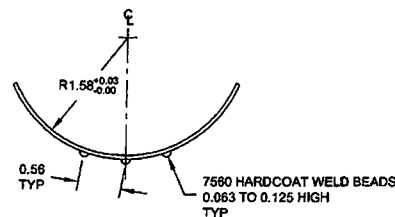
QA Closed: _____ Date: _____

Work Order update only ☐

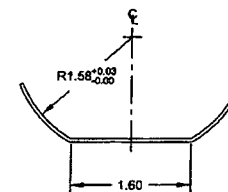
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OTHER : _____											



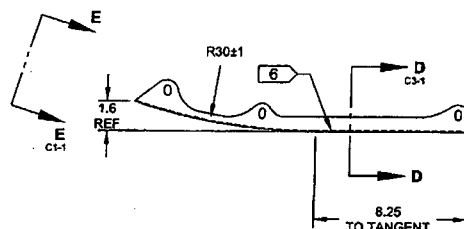
D3319-1F FLAT PATTERN



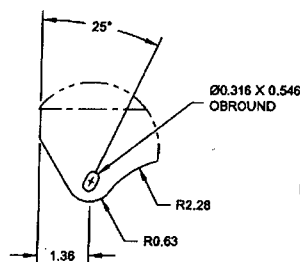
SECTION D-D
SCALE 4X



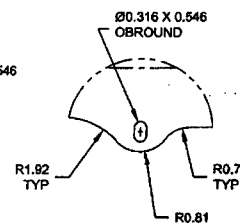
SECTION E-E
SCALE 4X



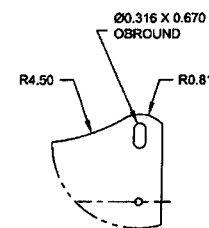
D3319-1 BENDING DETAIL
MAKE FROM D3319-1F



DETAIL A
SCALE 4X



DETAIL B
SCALE 4X



DETAIL C
SCALE 4X

D3319-1 WEARPLATE

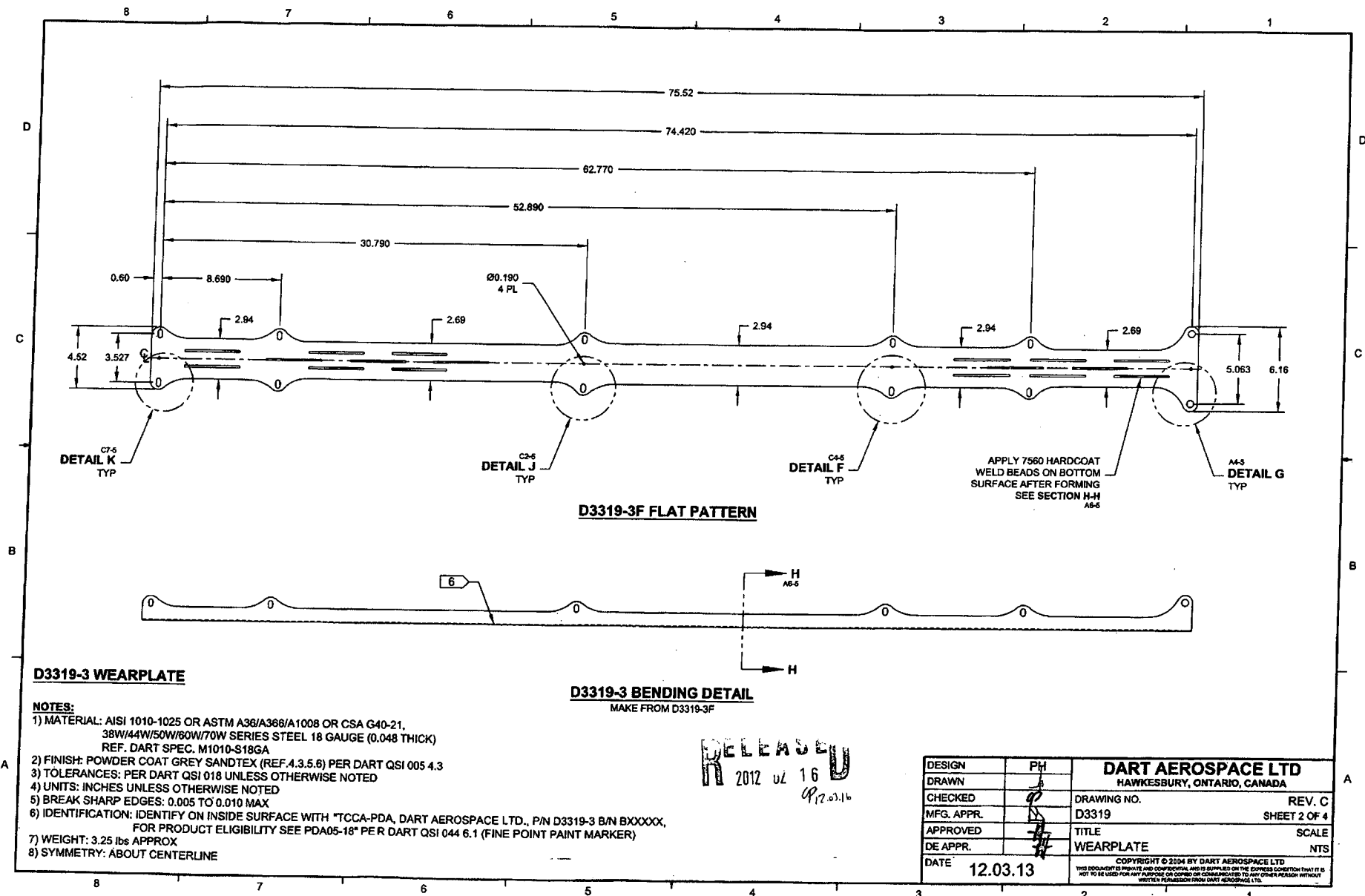
NOTES:

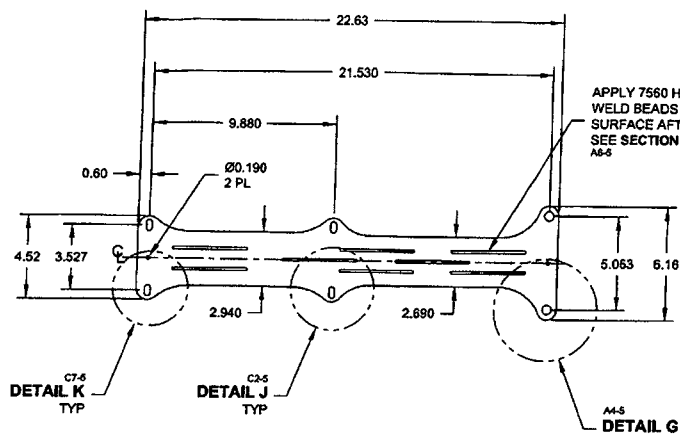
- 1) MATERIAL: AISI 1010-1025 OR ASTM A36/A366/A1008 OR CSA G40-21, 38W/44W/50W/60W/70W SERIES STEEL 18 GAUGE (0.048 THICK) REF. DART SPEC. M1010-S18GA
- 2) FINISH: POWDER COAT GREY SANDEX (REF. 4.3.5.6) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY ON INSIDE SURFACE WITH "TCCA-PDA, DART AEROSPACE LTD., P/N D3319-1 B/N BXXXXX, FOR PRODUCT ELIGIBILITY SEE PDA05-18" PER DART QSI 044 6.1 (FINE POINT PAINT MARKER)
- 7) WEIGHT: 0.90 LBS APPROX
- 8) SYMMETRY: ABOUT CENTERLINE

RELEASED
2012-03-16
PER ECN 12-546 12.03.16

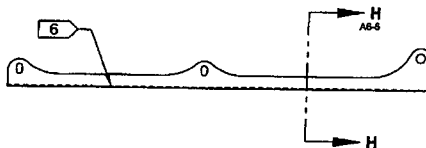
SA 137285 20150925

C	UPDATE TO CURRENT STANDARDS IAW QSI 043; CLOSED AFT. MOST HOLE ON -3/-5/-7 (REF DETAIL G). SEE NCR12-547.	MB	12.03.13
B	WIDEN HOLES, REDUCE WIDTH ON -3/-5/-7	PH	05.06.06
A	NEW ISSUE	PH	04.09.24
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.		WEARPLATE SCALE NTS	
DATE	12.03.13	COPYRIGHT © 2004 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMPILED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

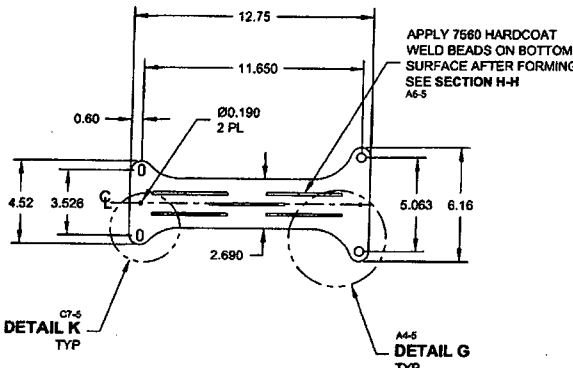




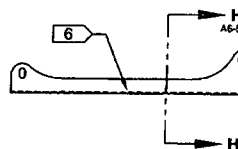
D3319-5F FLAT PATTERN



D3319-5 BENDING DETAIL
MAKE FROM D3319-5F



D3319-7F FLAT PATTERN



D3319-7 BENDING DETAIL
MAKE FROM D3319-7F

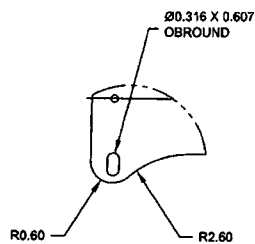
D3319-5/-7 WEARPLATE

NOTES:

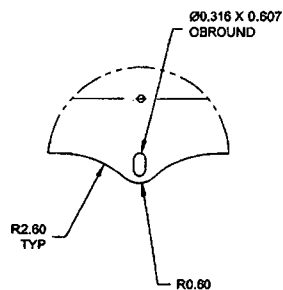
- 1) MATERIAL: AISI 1010-1025 OR ASTM A36/A366/A1008 OR CSA G40-21,
38W/44W/50W/60W/70W SERIES STEEL 18 GAUGE (0.048 THICK)
REF. DART SPEC. M1010-S18GA
- 2) FINISH: POWDER COAT GREY SANDTEX (REF.4.3.5.6) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005" TO 0.010" MAX
- 6) IDENTIFICATION: IDENTIFY ON INSIDE SURFACE WITH "TCCA-PDA, DART AEROSPACE LTD., P/N D3319-X B/N BXXXXX,
FOR PRODUCT ELIGIBILITY SEE PDA05-18" PER DART QSI 046 6.1 (PERMANENT MARKER)
- 7) WEIGHT: D3319-5 = 1.05 lbs APPROX; D3319-7 = 0.60 lbs APPROX
- 8) SYMMETRY: ABOUT CENTERLINE

RELEASE
2012-02-16
9720316

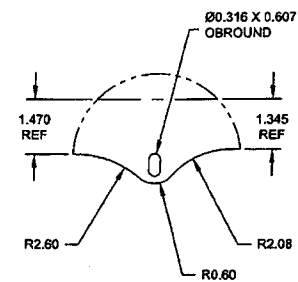
DESIGN	PH	DART AEROSPACE LTD	
DRAWN		HAWKESSBURY, ONTARIO, CANADA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. C
MFG. APPR.	<i>[Signature]</i>	D3319	SHEET 3 OF 4
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	WEARPLATE	NTS
DATE	12.03.13	COPYRIGHT © 2004 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR FOR DISSEMINATION TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



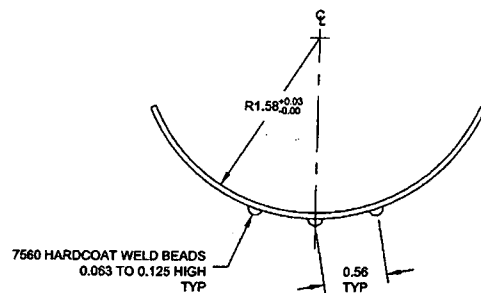
DETAIL K
SCALE 2X
B6-2
C4-3
C6-3



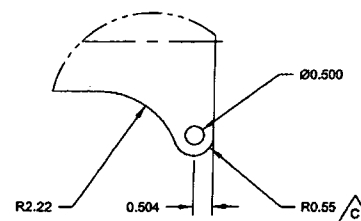
DETAIL F
SCALE 2X
B5-2



DETAIL J
SCALE 2X
B8-2
C7-3



SECTION H-H
SCALE 4X
B4-2
B3-3
B6-3



DETAIL G
SCALE 2X
B8-2
C2-3
C6-3
C

RELEASED
2012-02-16
P.2.03.16

DESIGN	PH	DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. C
MFG. APPR.		D3319	SHEET 4 OF 4
APPROVED		TITLE	SCALE
DE APPR.		WEARPLATE	NTS
DATE	12.03.13	COPYRIGHT © 2004 BY DART AEROSPACE LTD	
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DART AEROSPACE LTD		Work Order:	137285
Description: Wearplate		Part Number:	D3319-1
Inspection Dwg: D3319	Rev: C	Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
4.98	+/-0.030	4.986	/		V=Dc-02	
1.600	+/-0.010	1.600	/		U=Dc-01	
2.660	+/-0.010	2.668	/		Tape	
3.190	+/-0.010	3.199	/			
3.563	+/-0.010	3.557	/			
4.71	+/-0.030	4.716	/			
0.60	+/-0.030	.60	/			
10.576	+/-0.010	10.572	/			
11.942	+/-0.010	11.945	/			
18.09	+/-0.030	18.09	/			
Ø0.316 x 0.546	+0.006/-0.001 x +/-0.010	Ø.315 x .541	/			
Ø0.316 x 0.670	+0.006/-0.001 x +/-0.010	Ø.315 x .670	/			
Ø0.190	+0.005/-0.001	Ø.189	/			
3.815	+/-0.010	3.815	/			
16.100	+/-0.010	16.100	/			

Measured by:	Dc	Audited by:	DAS 38 9-89	Preliminary Approval:	
Date:	15/10/08	Date:	OCT 08 2015	Date:	

Rev	Date	Change	Revised by	Approved
A	07.05.31	New Issue	KJ/JLM	
B	12.05.15	Dimensions updated per Dwg Rev C	KJ	